



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/773,115      | 02/05/2004  | Alfonso Branca       | 22809               | 3986             |

535 7590 09/11/2006

THE FIRM OF KARL F ROSS  
5676 RIVERDALE AVENUE  
PO BOX 900  
RIVERDALE (BRONX), NY 10471-0900

|          |
|----------|
| EXAMINER |
|----------|

BUTLER, PATRICK

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1732

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

|                              |                                      |                                        |  |
|------------------------------|--------------------------------------|----------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/773,115 | <b>Applicant(s)</b><br>BRANCA, ALFONSO |  |
|                              | <b>Examiner</b><br>Patrick Butler    | <b>Art Unit</b><br>1732                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-54 is/are pending in the application.
- 4a) Of the above claim(s) 31-37, 39-49, 53 and 54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29, 30, 38 and 50-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election of the process invention, claims 29-52, in the reply filed on 31 May 2006 is acknowledged. Applicant's election of the (2) coupling a thermoplastic material and fibers species, (3) heat-shrinking product species, and (6) core that is plastic species in the reply filed on 27 July 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 53 and 54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 31 May 2006.

The Office Action mailed 03 May 2006 required an identification of the species that is elected and a listing of all claims readable thereon, including any claims subsequently added. However, Applicant's Response of 27 July 2006 appears to indicate which claims are directed specifically to each species rather than all claims readable on each elected species. Alternatively, it appears that Applicant is indicating that only Claim 29 is readable on all species.

Thus, in lieu of a listing of claims readable on the elected species within each group, the Examiner interprets Claims 29, 30, 38, and 50-52 to be readable on all elected species. Thus, claims 31-37 and 39-49 are also withdrawn from further

consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

### ***Specification***

The abstract of the disclosure is objected to because it contains legal phraseology: said element. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

Claims 29, 30, 38, and 50-52 objected to because of the following informalities: On line 2 of Claim 29, it appears that "con rolled" should be corrected to read "controlled." Appropriate correction is required. Claims 30, 38, and 50-52 are objected to via their dependency.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 29 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Christensen et al. (US Patent No. 4,765,942).

With respect to Claim 29, Christensen teaches consolidating (coupling) a thermoplastic poly(amide-imide) resin (thermoplastic material) and a fibrous reinforcing material (fibers), with the resin fully impregnating the reinforcing material (co-mixed fibers) (see col. 1, lines 8-15; col. 1, lines 56-58; col. 1, line 66 through col. 1, line 1). A pressure differential is applied to the article using a thin film bag 20 (with compression

means) while the resin is at minimum viscosity at such a rapid rate that the particle compresses and the resin flows (with compression means sensitive to the variation of the chemical-physical characteristics of said thermoplastic material), fully impregnating the reinforcing material, and the material is heated to 400 °F (when it is subjected to a predetermined temperature) (see col. 1, line 66 through col. 2, line 1; col. 2, lines 16-22; col. 2, line 67 through col. 3, line 2; Fig. 1).

With respect to Claim 50, Christensen teaches consolidating plies of reinforcing fibers (one or more layers) (see col. 2, lines 54-57) on a tool base 12 (that can be applied to a mold) (see col. 2, lines 46-50).

Claims 30 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Christensen et al. (US Patent No. 4,765,942) as evidenced by Matson (US Patent No. 4,734,976).

With respect to Claim 30, Christensen teaches the method of coupling as previously described. Christensen teaches that the compression means is a thin film bag made of KAPTON™ (see col. 2, line 67 through col. 3, line 2). Matson evidences that KAPTON™ is a heat-shrinkable material (see col. 3, lines 50-54).

With respect to Claim 38, Christensen teaches that the pressure is increased at a rate of at least 40 psi/min. to about 150-185 psig (wherein a calibrated pressure is applied onto the composite) (see col. 2, lines 2 and 3) using a thin film bag 20 (realized through compression means arranged on the outer surface of said composite of co-mixed fibers) (see col. 2, line 67 through col. 3, line 2; Fig. 1). Christensen teaches that the compression means is a thin film bag made of KAPTON™. Matson evidences that

KAPTON™ is a heat-shrinkable material (suitable for applying said pressure when said thermoplastic material is taken to a temperature which its chemical-physical characteristics change in such a way as to determine the impregnation thereof with said fibers) (see col. 3, lines 50-54). Christensen teaches the material is heated to 400 °F (temperature) (see col. 2, lines 16-18), and the resin is at minimum viscosity at such a rapid rate that the particle compresses and the resin flows (which its chemical-physical characteristics change in such a way as to determine the impregnation thereof with said fibers) (see col. 1, line 66 through col. 2, line 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen et al. (US Patent No. 4,765,942) as applied to Claim 29 above, and further in view of Barbier et al. (US Patent No. 4,737,618).

With respect to Claim 51, Christensen teaches the process of coupling as previously described. Christensen does not expressly teach an insert between fiber composite layers.

Barbier teaches inserting an electrical resistance element 6 between layers of composite fiber structure 5 (at least one insert is present between layers of said co-mixed fiber composite) (see Abstract; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Barbier's teaching of inserting an electrical resistance element between composite fiber layers in the process of Christensen in order to provide a device for de-icing the final product (see Barbier, Abstract).

Claims 51 and 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen et al. (US Patent No. 4,765,942) as applied to Claim 29 above, and further in view of Dunphy et al. (US Patent No. 5,399,854).

With respect to Claim 51, Christensen teaches the process of coupling as previously described. Christensen does not expressly teach an insert between fiber composite layers.

Dunphy teaches inserting an optical sensor 21 between fiber layers 10 and 12 (at least one insert is present between layers of said co-mixed fiber composite) (see Abstract; Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Dunphy's teaching of inserting an optical sensor (insert) in the coupling process of Christensen in order to detect residual stresses via their birefringence (see Dunphy, Abstract).

With respect to Claim 52, Christensen teaches the process of coupling as previously described. Christensen does not expressly teach that the layers of said co-mixed fiber composite have different orientations of said fibers.

Dunphy teaches having layers' fibers patterned  $45^\circ$  different from each other (that the layers of said co-mixed fiber composite have different orientations of the fibers) (see Abstract; col. 4, lines 33-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Dunphy's patterned layer orientation differences in order to create a final product that has minimum curling (see Dunphy, col. 4, lines 43-46).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mo.-Th. 7:30 a.m. - 5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Patrick Butler  
Assistant Examiner  
Art Unit 1732

  
CHRISTINA JOHNSON  
PRIMARY EXAMINER  
9/7/00